

ABSTRACT OF THE DISCLOSURE

A process for hydrotreating gas oil comprises: a first gas oil desulfurization step carried out in a first catalytic zone comprising a desulfurization catalyst; at least partial elimination of the hydrogen sulfide formed at the end of the first gas oil desulfurization step; one or more additional desulfurization steps carried out in one or more catalytic zones comprising a desulfurization catalyst. The distribution of the catalyst in the different zones can be selected so as to maximize the catalytic activity, and thus minimize the volume of catalyst required for a unit of a given capacity operating at fixed operating temperature and pressure, so as to obtain an intensely desulfurized gas oil.